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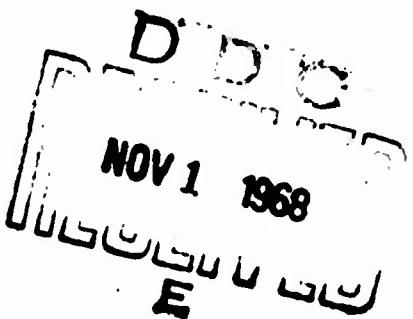
Armored Cavalry Platoon Training and Evaluation

I. The Armored Cavalry Platoon Combat Readiness Check

by LTC John G. Cook (Ret.) and Robert A. Baker
Printed in Armor, January-February 1967, Vol. LXXVI, No. 1

II. ACT I: Can Reality Be Duplicated?

by Robert A. Baker and LTC John G. Cook (Ret.)
Printed in Armor, March-April 1967, Vol. LXXVI, No. 2



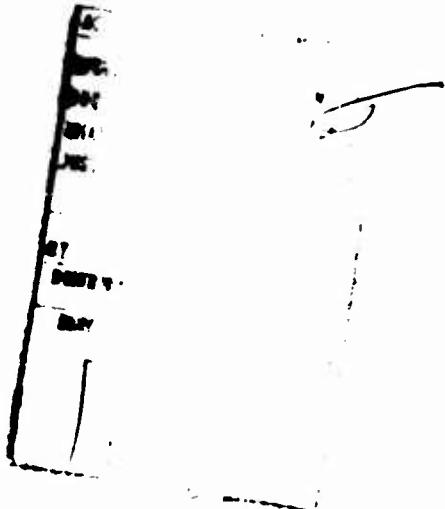
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The George Washington University
HUMAN RESOURCES RESEARCH OFFICE

The Human Resources Research Office is a nongovernmental agency of The George Washington University. The research reported in this Professional Paper was conducted under contract with the Department of the Army (DA 44-188-ARO-2). HumRRO's mission for the Department of the Army is to conduct research in the fields of training, motivation, and leadership.

The contents of this paper are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.



Prefatory Note

The research reported in this publication was performed by Division No. 2 (Armor), the Human Resources Research Office, Fort Knox, Kentucky, as part of Work Unit RECON, Training Methods and Techniques for Improving Combat Readiness of the Armored Cavalry Platoon. As part of the research seeking improvement in overall proficiency, a combat readiness check and an armored cavalry "trainer" were developed; they are the subjects of the two papers reprinted herein.

THE ARMORED CAVALRY PLATOON COMBAT READINESS CHECK¹

By LIEUTENANT COLONEL JOHN G. COOK (Ret.) and
DR. ROBERT A. BAKER

Human Resources Research Office, The George Washington University

Senior Armor personnel responsible for the field training of tactical units have often pointed out the difficulties of conducting effective combat training for Armored Cavalry personnel, the need for improving both the amount and quality of Armored Cavalry training, and the importance of developing for such units a practical and meaningful standard of combat readiness.

To help meet these needs and to aid in the solution of other complex training problems, Headquarters, USCONARC, in 1963 established the requirement for a training research task and assigned the mission of improving Armored Cavalry training techniques to the HumRRO Division No. 2, Armor Human Research Unit at Fort Knox.

Dr. Robert A. Baker, a frequent contributor to ARMOR, received his BS and MS degrees from the University of Kentucky and his Doctorate from Stanford University. During World War II he served in Europe with the US Army Air Corps. Subsequently, he was a research scientist at Lincoln Lab, MIT. He is now a Senior Staff Scientist at the U.S. Army Armor Human Research Unit, Fort Knox, Kentucky. Since 1954 he has been conducting research on Armor training. Dr. Baker has published more than 50 articles in professional journals as well as two collections of scientific humor. Along with Colonel Cook, he is also co-editor of the *Tank Commander's Guide*.

The overall mission of this Research task RECON was to develop sound, reliable and objective training program guidance, as well as training methods, instructional aids, techniques, and management procedures for the armored cavalry platoon—including the individual soldier's skills as well as the team skills of the squad, section, and intact platoon.

The research team began the work with a survey of the available and pertinent training literature. Next the teams interviewed experienced Armored Cavalry Unit Commanders and line and staff personnel in all of the Armored Cavalry regiments in the 7th Army—the 2nd, 11th, and the 14th—and

Lieutenant Colonel John G. Cook, retired. Served with the 4th US Cavalry in 1932. He was a Tank Platoon Leader and Company Commander during World War II in Europe with the 714th Tank Battalion, 12th Armored Division. During Korea, he served as S3 of the 89th Tank Battalion. In May, 1952, he was assigned as an instructor in the Command and Staff Department, The Armor School, and, in 1955, became Operations Officer of the Department. He retired in 1956 and since this time has served at the U.S. Army Armor Human Research Unit as a Military Advisor. His major decorations include: Distinguished Service Cross, Silver Star, Bronze Star (Valor), and the Purple Heart. He, with Dr. Baker, is a co-editor of the *Tank Commander's Guide*.

the 3rd ACR at Fort Meade as well as several of the Armored Cavalry squadrons organic to the Infantry Divisions. Observations of Armored Cavalry units during FTX's and Army Training Tests were also made.

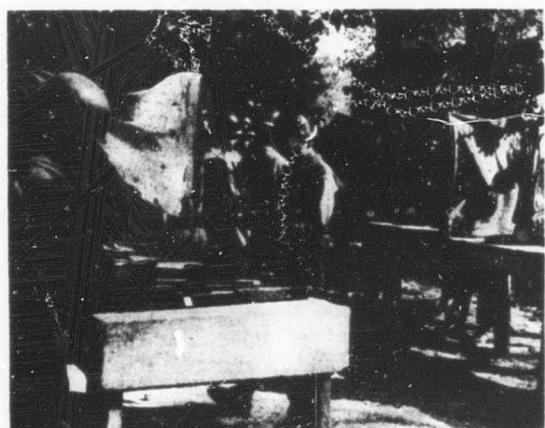
As a result of the interviews with unit commanders additional training requirements were uncovered and some need priorities were established.² Although the lack of adequate training areas, excessive personnel turnover, and the need for better trained junior officers were frequently reported, all of the commanders stressed the need for criteria which would reliably evaluate the combat-ready status of their units and would furnish the kind of information that could be used as a basis for concerted action and would lead to concrete, specific, and worthwhile improvements.

Most of the unit commanders also noted that conducting realistic training tests for cavalry units larger than the platoon is almost impossible.

Finally, many of the officers noted that a large number of the duties and skills peculiar to the personnel of the Armored Cavalry Platoon had not been spelled out in enough detail in the existing literature to provide the guidance needed by the untrained and inexperienced.

In view of all of these problems it was decided the commander's needs could best be served by carefully defining the critical combat duties and skills of each member of the Cavalry Platoon.³ Using these requirements, the research team, next would prepare detailed job descriptions that is, "how-you-do-it-in-step-by-step-fashion" outlines or, in military terms—combined Army Subject Schedules and Lesson Plans for each of the critical platoon jobs and MOS skills. Then, when the job descriptions were complete, they would be presented in the format of an objective, step-by-step, performance proficiency test. This

Armored Cavalry trainees undergoing individual weapons check (Phase I) of the Armored Cavalry Platoon Combat Readiness Check.



plan was adopted because a similar procedure, used to develop a combat readiness check for the tank platoon, had proved to be quite successful.^{4,5}

The development of a similar test for the Cavalry platoon, it was believed, would not only reveal specific weaknesses and deficiencies at the individual, crew, and section levels but would also provide a broader measure of the capabilities of the entire platoon. Such a test should also provide a useful research tool for the evaluation of the effectiveness of any new training methods and techniques. It should be understood, however, that the development of such a test was not intended to replace any of the current cavalry ATT's. Such a test, instead, would serve as an additional, or supplementary, index of combat readiness.

DEVELOPMENT OF THE AC READINESS CHECK

Using the above plan the research personnel reviewed Armor and Armored Cavalry manuals as well as other literature pertaining to the duties, skills, and activities of Armored Cavalry platoon personnel. Material from these sources and from interviews with experienced Armor personnel was used as a basis for preparing tentative lists of job requirements for the platoon leader and platoon sergeant, and for personnel of the scout, tank, rifle, and support units making up the platoon. These lists were reviewed by selected personnel of various departments of the Armor School for accuracy of content and adequacy of coverage and were then modified to reflect their comments.

The lists were next submitted to senior platoon, squad, and section leaders in 13 Armored Cavalry squadrons in USAREUR and CONUS for evaluation. Each respondent reviewed the list applicable to his own job and to other specified jobs under his supervision. Using a five-point scale, the respondent judged each job requirement in terms of its importance for combat. From these data, the essential requirements of each job for combat—were obtained.

Next, a survey of the current ATT's Armored Cavalry training programs, and FTXs used by 12 armored cavalry squadrons was made. On the basis of an analysis of these tests and the job requirements, test items covering the 14 types of jobs, representing 5 MOS's and 16 particular MOS descriptions were prepared. These test items were then assembled in the form of performance tests called "reaction checks." When the initial version of each of these checks was completed it was reviewed by the appropriate departments of the Armor School, revised and improved, and resubmitted.

On the basis of the Armor School evaluation and approval, a field performance test of combat readiness *The Armored Cavalry Platoon Combat Readiness Check*—suitable for administration at the ar-

mored cavalry platoon level, is now being tested and evaluated by units in the field. If the evaluation is favorable, USCONARC plans to recommend the checks be included in the appropriate DA publications.

DESCRIPTION OF THE COMBAT READINESS CHECK

This check was written with the assumption that measures of individual skills, crew and section skills, and intact tank platoon skills are needed to maximize the usefulness of the final product. The check was therefore, divided into three phases: (1) The Individual Phase; (2) The Squad and Section Phase; and (3) The Intact Platoon Phase. Each of these phases, known as a "Reaction Check," is a complete unit containing detailed instructions for administration.

Phase I, the *Individual Phase*, covers the following common skill areas:

1. **Weapons** viz. caliber .45 submachine gun, caliber .45 pistol, caliber 7.62 M14 rifle, M79 grenade launcher, caliber 7.62 (M60 and M73) machine gun, and caliber .50 (M85 and/or M2 or M2 modified) machine gun.
2. **Radio telephone Procedure** viz. phonetic alphabet, phonetic spelling and pronunciation, and radio procedures.
3. **Radio Operations** (Putting radio sets AN/VRC 25, AN/VRC46, and AN/VRC12 into operation)
4. **Observation Post** (Occupation of, and observing and reporting procedures)
5. **First Aid** (Treatment of wounds, shock, fractures, and use of tourniquets)
6. **Dismounted Combat Movements** (stealth and security, rushing, crawling, walking)
7. **Range Estimation** (Flash and sound ranging, estimation by eye, binocular and mil relation, and maps)
8. **Map reading** (Map scales, symbols, orientation location, resection, intersection, coordinates, elevation, distance measurement, azimuth, back azimuth, and identification)
9. **Artillery Adjustment** (Adjustment of 4.2 inch supporting fire to include range determination, deflection changes, sensing, etc.)
10. **CBR** (Use of the protective mask, self-aid, and nuclear protection procedures)

Phase II includes checks for the scout squad and section, tank crew and section, rifle squad, and support squad. The skills and knowledges measured are:

1. Vehicle stowage

2. **Before-, during-, and after-operations maintenance**
3. **Vehicle driving**
4. **Reconnaissance operations (squad and section)**
5. **Methods of mounted movement (squad and section)**
6. **Live firing of vehicle-mounted weapons**
7. **Live firing of weapons dismounted (rifle squad)**

The emphasis in this phase is on the crew interactions required in order to insure a smooth-working team, and on crew member responsibilities. Also incorporated, for those squads and sections containing more than one vehicle, are platoon member intervehicle coordination and responsibilities.

During Phase III the individual squad and section jobs are meshed into an intact platoon combat field exercise. The primary purpose of this phase is to "check" the platoon leader's skill in command and control and to "check" the skill of the platoon in responding appropriately. In this phase, both the platoon and the platoon leader are checked in the following troop leading and command and control activities:

1. **Issuance of the leader's "Order of Execution."**
2. **Order of movement to Starting Point.**
3. **Route reconnaissance and adjacent terrain.**
4. **Movement to a screening area (change of mission and direction)**
5. **Occupation and the organization of a screen.**
6. **Preparation for movement to a blocking position.**
7. **Movement to, and occupation of, blocking position.**
8. **Conduct of action at blocking position.**
9. **Preparation for, and movement to, initial delay position.**
10. **Occupation and organization of initial delay position.**

A sample page from the score sheet used in this phase is shown in Figure 1.

The concept of the test is a "county fair" procedure and, thus, requires the establishment and use of testing stations. The conduct of each station and substation is carefully elaborated in the test manual in order that all of the administrative duties will be clearly understood. To accomplish this each "check" includes:

1. A diagram of the organization and layout of the station and all substations.
2. A listing of the materiel, equipment, and personnel requirements for each station

(based, of course, upon local SOP's, policies, and safety requirements).

3. A scenario providing step-by-step operating procedures, including briefings, explanatory remarks, scoring instructions, and trainee requirements.
4. A score sheet designed as both a solution and as an instructional supplement.

All of these procedures are written in a manner designed to assist the commander and the instructors in the making of an objective, standardized assay of the skills and knowledges of all members of the armored cavalry platoon.

Figure 1

A Sample Page From The Intact Platoon Phase (Phase III) of the Armored Cavalry Platoon Combat Readiness Check

PLATOON LEADER'S NAME _____

PLATOON _____

Issuance of Platoon Order

Score

(✓) (0)

1. Assembles Section and Squad Leaders.	<input type="checkbox"/>	<input type="checkbox"/>
a. Ensures that all maps are oriented.	<input type="checkbox"/>	<input type="checkbox"/>
b. Selects a vantage point from which to issue the order.	<input type="checkbox"/>	<input type="checkbox"/>
c. Points out their present position.	<input type="checkbox"/>	<input type="checkbox"/>
d. Makes certain all can hear him.	<input type="checkbox"/>	<input type="checkbox"/>
e. Has plan written out in detail.	<input type="checkbox"/>	<input type="checkbox"/>
2. Issues his order orally, and mentions:	<input type="checkbox"/>	<input type="checkbox"/>
a. Aggressor forces are scattered.	<input type="checkbox"/>	<input type="checkbox"/>
b. Aggressor reported in vicinity of _____ and _____.	<input type="checkbox"/>	<input type="checkbox"/>
c. No aggressor resistance encountered in last 12 hours.	<input type="checkbox"/>	<input type="checkbox"/>
3. Mentions the Friendly Situation, including:	<input type="checkbox"/>	<input type="checkbox"/>
a. Troop _____ attached to _____.	<input type="checkbox"/>	<input type="checkbox"/>
b. Troop mission is to reconnoiter routes to _____ (northeast).	<input type="checkbox"/>	<input type="checkbox"/>
c. _____ (Brigade) to seize at _____.	<input type="checkbox"/>	<input type="checkbox"/>
d. Troop has <i>no</i> attachments or detachments.	<input type="checkbox"/>	<input type="checkbox"/>

ADVANTAGES OF THE ACPCRC AND SUGGESTED USES

Although there are a number of armored cavalry platoon training tests and exercises the *Armored Cavalry Platoon Combat Readiness Check*, it is believed, offers several significant advantages over the tests currently being used. These advantages are:

1. **Comprehensiveness.** Most of the critical requirements for combat operations at the platoon level are represented.

2. **Objective Scoring.** Each item in each of the checks is constructed in such a fashion that the umpire's and scorer's judgments and opinions are minimized; that is, a clear-cut decision as to suitability of the performance can be readily made. For most items, the performance is so outlined that the scorer need only note whether or not the act was performed. The individual trooper, the crew, section, or platoon is scored as either right or wrong and receives full credit or zero on each point tested.

3. **Identification of Training Needs.** Because of the manner of construction and scoring, the test identifies specific deficiencies at the individual, crew, section, and platoon levels, thus making specific corrective action possible.

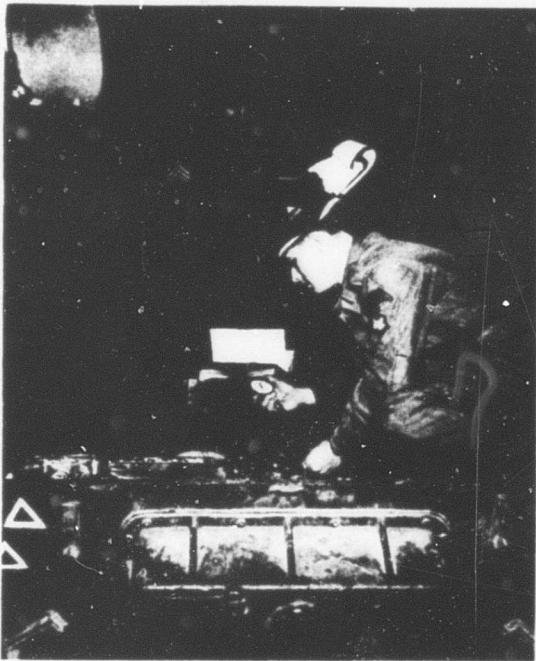
As a result, the test can be used by commanders of cavalry units to provide:

- a. A comprehensive and realistic measure of combat readiness at the cavalry platoon level.
- b. A detailed picture of individual, crew, section, and platoon strengths and weaknesses. Moreover, those areas in which retraining or additional training is needed are also pinpointed exactly.
- c. An end-of-cycle evaluation of training achievement before training at the troop or squadron level is begun.
- d. A proficiency standard by which the cavalry platoons of a given troop, or selected platoons from several troops can be compared.

In these checks it should also be noted that none of the individual items is weighted. Obviously some of the items are more important than others. Yet, at

Armored Cavalry trainee undergoing the Map Reading Check, Phase I, of the Armored Cavalry Platoon Combat Readiness Check.





Instructor administering the Vehicular Reaction Check in Phase II of the Armored Cavalry Platoon Combat Readiness Check.

the present, no criterion adequate for the purpose of assigning weights to specific items has been established by armored cavalry command personnel. Therefore, since there are no clear-cut, specific, unambiguous criteria for establishing the relative importance of the items, it was decided best to give all items equal weight.

In evaluating combat readiness, it must be remembered that any failure of personnel to complete any test item of an essential combat skill is a serious matter requiring corrective action. Similarly, no ratings of Superior or Inferior, and no scoring standards, have been established. Since the commander is responsible for the training of his troops, he, of course, desires that proficiency be as high as possible under existing circumstances. It is believed that he is more concerned with specific strengths and weaknesses in individual, crew, and team skills than he is with meaningless numbers or grades.

Nevertheless, should weighting of items or ratings of performance in terms of letters, grades, or descriptive adjectives be desired, the test does not preclude their addition by any commander.

Although the primary purpose of the ACPCRC is to provide a measure of training achievement and readiness for combat, the ACPCRC, unlike many other tests, can also be used in the role of a training vehicle. Due to the unique format of the check lists, their comprehensiveness, and step-by-step coverage of the details of each critical skill (See

Figure 2), they also can be used as lesson plans for the presentation of a unit of instruction, as self-teaching devices, or as supplemental study material.

Figure 2

Sample of The Score Sheet For The Individual Weapons Phase

In the Combat Readiness Check Individual Phase (Phase I) the scoring statement, "Clears the weapon correctly," for example is broken down into 25 independent SCORING POINTS, each scoring point being a PRECISE and CORRECT step in the CLEARING of a WEAPON.

An extract from one of the scoring sheets is shown below.

MACHINE GUN, Cal. .50 (M85)

The Scorer will check (✓) each item accomplished by the soldier; the Scorer will place a zero (0) opposite each item which was not accomplished. If the soldier does not know the action to be taken, the Scorer will tell the soldier what to do, and request the soldier to do it. The items completed in this manner will be scored zero (0) but the soldier will have gained a measure of knowledge.

SOLDIER'S NAME RANK

SOLDIER'S UNIT

First Requirement Item (Disassembly)

1. Check SAFETY to ensure it is in the	Score
"Fire" position	(✓) (0) <input type="checkbox"/> <input type="checkbox"/>
NOTE: The SAFETY is in the "Safe" position (See para. 2 q). Located on left side of RECEIVER.	
a. Places SAFETY in the "Fire" position	<input type="checkbox"/> <input type="checkbox"/>
2. Grasps HANDLE of the HAND CHARGER ASSEMBLY	<input type="checkbox"/> <input type="checkbox"/>
a. Pulls HANDLE all the way to the rear	<input type="checkbox"/> <input type="checkbox"/>
b. Locks the BOLT in the rearward position	<input type="checkbox"/> <input type="checkbox"/>
3. Places the SAFETY in the "Safe" position	<input type="checkbox"/> <input type="checkbox"/>
4. Grasps the COVER LATCH KNOB	<input type="checkbox"/> <input type="checkbox"/>
a. Uses THUMB and FOREFINGER of the LEFT HAND	<input type="checkbox"/> <input type="checkbox"/>
b. Rotates the COVER LATCH KNOB all the way forward	<input type="checkbox"/> <input type="checkbox"/>
c. Holds the COVER LATCH KNOB forward	<input type="checkbox"/> <input type="checkbox"/>
d. Raises the COVER to the vertical position	<input type="checkbox"/> <input type="checkbox"/>
(1) Uses the RIGHT HAND	<input type="checkbox"/> <input type="checkbox"/>
5. Lifts FEED TRAY to the vertical position	<input type="checkbox"/> <input type="checkbox"/>

The commander, of course, is free to utilize the check lists in any manner he desires. For example, they may be used to determine the capabilities of crew members in positions *other than* those to which they are assigned. Further, the various checklists may be used *separately*—without regard for continuity—to train crews, squads, or sections in specific areas of deficiency. Should a platoon leader be "weak" in "setting up a screen," for example, then the Screen Check could be separately utilized to increase the officer's knowledge and skill in this particular type of security operation.

Finally, it should be emphasized that the three phases of the ACP Combat Readiness Check are

both *interrelated* and *flexible*. They may be used singly or in combination. Also they may be tailored specifically to suit any particular Commander's training requirements since they were, in the final analysis, specifically designed to aid him in the planning and execution of his training mission and to help the platoon reach a high level of combat skill.

Additional information and details concerning either the theory, construction, or the envisioned application of the ACP Combat Readiness Check can be obtained by writing either of the coauthors at HumRRO Division No. 2 (Armor), Fort Knox, Kentucky 40121.

FOOTNOTES

¹The research reported in this paper was performed by HumRRO Division No. 2 (Armor), Fort Knox, Kentucky, under Department of the Army contract with The George Washington University. The contents of this paper do not necessarily represent the official opinion of the Department of the Army.

²A formal report of this work may be found in Cook, John G. "A Survey of Problems In The Tactical Training of The Armored Cavalry Platoon," Research Memorandum, HumRRO Division No. 2 (Armor), Fort Knox, Kentucky, Jan. 1963 (FOUO).

³This work is described in detail in Warnick, W. L. and Baker, Robert A. "Determination of Combat Job Requirements For Armored Cavalry Platoon Personnel," TR 92, Human Resources Research Office, Alexandria, Va., Dec 1964.

⁴"The Tank Platoon Combat Readiness Check," Baker, Robert A. and Cook, John G., *Armor*, Vol LXXI, No. 3, pages 20-23, May-June 1962.

⁵"Tank Platoon Combat Readiness Check," Tugge, Lewis M., *Armor*, LXXIV, No. 1, Pgs. 12-15, Nov-Dec 1965.

AUTHOR'S NOTE

Training the Armored Cavalry Platoon poses unusual problems because of the diversity of its elements and of the combat missions assigned to it. The complex nature of the training needed is evident from the fact that 14 types of jobs, representing five MOS's and 16 MOS descriptions are included in the table of Organization for the Armored Cavalry Platoon.

After determining the critical combat duties and skills of each member of the platoon a series of tests or "reaction checks" were developed. These objective "checks" are grouped into three phases: Phase I, INDIVIDUAL PHASE; Phase II, SQUAD and SECTION PHASE; and Phase III, INTACT PLATOON PHASE. Each reaction check is a complete unit with instructions personnel and materiel requirements, scenario, and score sheets.

Taken together, the three phases form the Armored Cavalry Platoon Combat Readiness Check (ACPCRC). The ACPCRC was prepared for the specific purpose of helping the commander determine the precise level of a soldier's skill and knowledge. The ACPCRC may also be used to furnish guidelines for training prior to the unit's participation in Army Training Tests or as lesson plans in the presentation of instruction. The ACPCRC may also be used as self-teaching or in any manner the commander may desire.

ACT I

*...can reality be
DUPLICATED?*



DR. ROBERT A. BAKER and LT. COL. JOHN G. COOK, RET.
Human Resources Research Office, The George Washington University

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Commanders responsible for the field training of tactical units have often pointed out the difficulties of conducting effective combat training for armored cavalry personnel, the need for improving both the amount and the quality of armored cavalry training, and the importance of developing for these units a practical and meaningful standard of combat readiness. Because of its flexibility, firepower, and sustained fighting capability, armored cavalry is not only the first line of defense in the Seventh Army but cavalry elements are also in combat daily in Viet Nam.

The Armored Cavalry organization is not only superbly suited for certain types of combat missions but it is also unique in certain aspects of its organization, mission, and employment.

This very same uniqueness and the very same factors that account for the cavalry regiment's combat efficiency, however, also create some unique training problems and place some unusual burdens on the commander's shoulders.

Mention of a few of the singular aspects of armored cavalry units will bear this out:

1. Within the basic fighting unit—the Armored Cavalry Platoon—there are 14 types of jobs representing 5 MOS categories and covering 16 separate MOS job descriptions. This wide variety of assignments thus complicates all of the normal training problems.

2. This platoon, consists of a scout section made up of two scout squads in M114 vehicles, a tank section consisting of 3 tanks, an infantry squad divided into 2 fire teams in the M113 APC, a support squad equipped with a 4.2 inch mortar, and the Platoon Headquarters also in an M114 vehicle. Thus, in one platoon we have most of the Army's combat elements—Infantry, Artillery, and Armor—all tied together by a small but effective communications network. The Armored Cavalry Platoon is, accordingly, the smallest combined-arms team in the U. S. Army. Since the armored cavalry platoon is composed of five diverse types of sections or elements, the problems of command and control are rather unusual and demanding.

3. Because of the missions typically assigned the Armored Cavalry units and the diversity of weapons and personnel, the range and terrain requirements for tactical training of armored cavalry units are often greater than for any other type of line combat elements.

4. Next, enlisted personnel reporting to armored cavalry units, though adequately trained for service as a tanker or rifleman, have seldom received the degree of combined arms training essential in an armored cavalry unit. Further, few replacements have been given any training as scouts.

5. Finally, nearly all of the Armored Cavalry Platoons are commanded by young officers whose

training and practical experience in combined arms operations is normally somewhat limited.

Therefore, in full recognition of these problems and the training difficulties they cause, Headquarters, USCONARC in 1963, established a research requirement for Task RECON, "The Evaluation and Improvement of Armored Cavalry Training," and assigned the research mission to HumRRO Division No. 2, Armor Human Research Unit at Fort Knox.

The mission of Task RECON was to develop sound, reliable and objective training program guidance, as well as training methods, instructional aids and techniques and management procedures for the improvement of the overall proficiency of the Armored Cavalry Platoon, i.e. for both the individual soldier as well as the squad, section and platoon skills.

In carrying out this mission an increased emphasis was placed on the development of improved training methodology and a mission-type orientation was kept throughout the conduct of the research. Such an orientation, it was believed, would result in the production of the maximum number of needed products designed to meet current and future Army needs.

The research began with interviews of experienced Armored Cavalry Unit Commanders, as well as staff and line personnel, in all of the Armored Cavalry regiments in Europe—the 2nd, 11th, and 14th, and the 3rd in CONUS, as well as several of the Cavalry squadrons organic to Infantry Divisions.

In general, the unit commanders reported that lack of adequate training areas, excessive turnover of personnel, and the need for better trained junior officers were their most critical training problems. In addition, they noted that many of the critical duties and skills peculiar to the personnel of the Armored Cavalry Platoon had not been spelled out in enough detail to permit the unit commanders to readily pinpoint training deficiencies and thus more efficiently assign the priorities of training time and training emphasis.

Using these comments as a guide the research team developed a set of job requirements and combat criteria known as *The Armored Cavalry Platoon Combat Readiness Check*. The development of this test has been described in detail in an earlier issue of this magazine (*ARMOR*, Jan.-Feb. 1967 page 18). When the combat job requirements had been determined the research team then looked for ways and means of overcoming some of the training difficulties facing the unit commander—specifically, ways to meet the need for better trained junior officers and NCO's and ways and means of overcoming the problems caused by a shortage of suitable training areas.

DEVELOPMENT OF THE ARMORED CAVALRY PLATOON TRAINER

In combat training situations where it is either impossible to participate directly or where it is too costly to provide on-the-job experience, the Army has frequently resorted to the use of war games. Although the training value of war games has long been recognized, relatively few attempts have been made to develop such games for use at the platoon or squad levels. Two recent exceptions have been the Miniature Armor Battlefield facility for the tank platoon, (described in the September-October 1960 issue of *ARMOR*) and the Armor Combat Decisions Game, also for the tank platoon (described in the January-February 1962 issue of *ARMOR*).

Therefore, in an attempt to meet the needs of the Armored Cavalry Troops, and to provide a compact, inexpensive yet effective technique for the conduct of reconnaissance training and the various armored cavalry platoon missions, the earlier concepts were modified and a new technique of terrain visualization was designed.

This technique, along with a new training program designed around the detailed job requirements and combat skills, and with accompanying instructional aids, tests, and supporting materiel was called the *Armored Cavalry Trainer* (ACT).

In brief, this "training package" is a set of comprehensive lesson plans covering the critical combat skills which are carried out in "war game" fashion on a large viewing screen by remotely controlled projector units which superimpose small images of the platoon vehicles on a map display. These images are then independently moved, under the operator's precise control, over the surface of the projected map display.

The Armored Cavalry Trainer is made up of the following five components:

1. A large motion picture or viewing screen on which enlarged map section transparencies are projected.

2. Partitioned booths (representing vehicles) containing chairs and tables, standard military maps, acetate, and grease pencils for the personnel who man the vehicles in the platoon.

3. Motorized projector units, individually controlled by the trainees, which superimpose a small image of any vehicle in the platoon on the enlarged map display. (See Fig. 1) Each of the vehicle symbols is geared so that it can be moved across the map display in the same speed-ratio that the actual wheel or track vehicle would move across real terrain. Symbols for the wheeled vehicles are geared to move slightly faster than the tracks.

4. The standard radio equipment normally found in each vehicle in the platoon, mounted in the booths and controlled and operated by members of the platoon.

5. Additional motorized projector units, controlled by support personnel and used to represent friendly supporting artillery and nuclear weapons, aggressor vehicles and personnel etc.

The general arrangement of the equipment and personnel is shown in Figures 2 and 3

Figure 1



Close-up of the motorized projector unit and vehicle symbol control mechanism. The symbol is on a 35mm slide in the projector on the left. The projector image is reflected on to a mirror which reflects the image on to the vertically mounted map display. Movement of the mirror is controlled in the vertical and horizontal planes by means of geared motors. The motors in turn are regulated by rheostats which control the speed of the geared motors. The operator controls the symbol, i.e., varies the current through the rheostats to the motors, by means of the joystick shown in the right center of the picture.

OPERATION AND USE OF THE ARMORED CAVALRY TRAINER

Utilizing the motorized projector units and standard series radios the cavalry platoon carries out a series of specially prepared tactical training exercises in free-play, two-sided war-game fashion. Five training exercises are designed to teach map reading, communications procedure, principles of movement, armored cavalry tactics, and principles of command and control. These exercises, prepared with the aid of the Command and Staff Department of the USA Armor School, are graded in difficulty from simple to complex. Not only are they combat realistic; they also provide freedom of tactical choice and freedom for command decision. Each exercise stresses certain general principles of cavalry operations and requires an optimal solution. The exercises also cover the following aspects of cavalry operations:

Problem 1. (a) Route Reconnaissance Operations

- (b) Establishment of Blocking Positions
- Problem 2. (a) Advance Guard Operations
 - (b) Screening Force Operations
 - (c) Withdrawal Through Rearward Positions
 - (d) Occupation of a Delay Position
- Problem 3. (a) Zone Reconnaissance Operations
 - (b) Use of Phase Lines, Boundaries, and Contact Points
- Problem 4. (a) Mobile Flank Guard Operations
- Problem 5. (a) Delaying Action Operations

For each problem, an instructor's check list is provided and, for some of the problems, prearranged or "canned" messages are supplied for the use of the appropriate platoon members to provide realism and continuity of action. For those problems involving aggressor activity, two forms of the exercise are provided—one with the aggressor *imminent* and another with the aggressor in an active role.

The five exercises are designed so that the program may be administered to an intact cavalry platoon in a normal five-day week. For each tactical exercise, map sections, overlays, and prearranged messages are provided for the use of each trainee, the instructor, and the support personnel.

In conducting the training exercises on the ACT it is assumed that user personnel are generally familiar with the cavalry platoon and its organization, mission, and employment. If this is not the case such instruction should precede the use of these exercises and the trainer.

Before the typical exercise begins and before the trainees enter the booths in front of the screen, support personnel should arrange and position all of the map slides to be used in the problem and should then assign positions to the aggressor units and locate the targets and areas for all the supporting artillery. Next, the instructor has the trainees turn on their motorized projector units and move their vehicle symbols over the map display. This is done in order to familiarize the trainees with the capabilities and limitations of the equipment. After the communication equipment is checked, the trainees then report to the instructor. He, in turn, distributes copies of the maps or map sections and issues the Oral Operations Order to the platoon leader. Then the platoon leader works out his plan of procedure and briefs his squad and section leaders on the conduct of the mission. After this the platoon members don their head and chest sets and move their vehicle symbols across the map display to the designated assembly area. When the vehicles are in the proper assembly area positions, the instructor or-

ders the platoon leader to open the net and check in the vehicles. When all are checked the platoon leader requests permission to move out. After receiving permission from his superior, he gives the movement order to the platoon and they carry out the mission to the best of their ability.

During each exercise the instructor monitors all movement of the vehicle symbols and, if any vehicle attempts to traverse impassable terrain due to failure to read the map properly, the instructor stops the movement and calls attention to the error. After the mistake is corrected the problem is resumed.

The instructor also controls the movements of the aggressor and the delivery of both the aggressor artillery and the fire of the supporting artillery.

After each problem is completed, the instructor holds an extensive critique discussing and reviewing all of the important tactical principles and concepts brought out in the problem.

To operate and maintain the ACT, one instructor, two assistant instructors, and a field radio repairman (MOS 296.00) or an armor communications specialist (MOS 312 or 296) are needed.

To assist the user in evaluating the effectiveness of the training given on the ACT, two proficiency tests have also been constructed. These two criteria, (1) *The Armored Cavalry Platoon Evaluation Problem*, and (2) *The Armored Cavalry Platoon Knowledge Test*, were specifically constructed with the aid of the Armor School to provide quantitative measures of proficiency in Armored Cavalry operations at the platoon level.

The first of these measures *The ACP Evaluation Problem*, a tactical exercise conducted on the Armored Cavalry Trainer, is essentially a final test or examination for all members of the platoon.

The second measure, *The ACP Knowledge Test*, is a comprehensive written test covering armored cavalry tactics, communications, and map reading. Specific tests for numerous aspects of squad, section, and platoon operations are provided. Each of the subtests is based on instruction given at the Armor School and on the training exercises conducted on the Armored Cavalry Trainer.

FIELD EVALUATION OF THE ACT

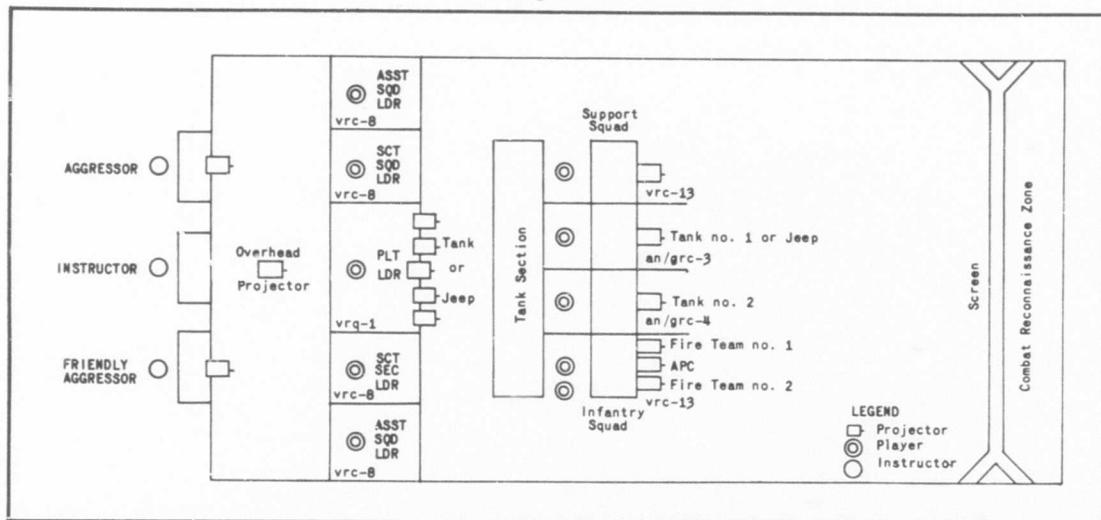
After the research personnel had finished their own evaluation of the trainer, the entire training package was turned over to the 1st Reconnaissance Squadron, 1st Training Brigade, USATCA, Fort Knox for further evaluation. For a six-month period in FY 1965 seven brigade instructors used the ACT for the conduct of reconnaissance operations and scout training. Seven different eight-hour blocks of instruction were administered to a total of 168 trainees. After each eight-hour block of training, each instructor made an evaluation of the ACT

on the basis of their experience in conducting scout training with the device and without it.

When the results of these questionnaires were

tallied not only were the instructor's opinions of the trainer highly favorable but they also unanimously recommended adoption of the training system be-

Figure 2



THE ARMORED CAVALRY TRAINER: Arrangement of Personnel and Equipment.

Figure 3



View of Armored Cavalry Personnel During Training

cause in their opinion, the ACT provided more and better training for less money in less time and with fewer instructors.

To provide potential users with general guidance for the construction, operation, and maintenance of the ACT and to furnish an overview of the requirements and procedures for its effective utilization task RECON personnel then prepared a User Manual.²

Following a review of this entire training package HQUSCONARC approved the Armored Cavalry Trainer for use in Army training particularly USAAR and ARNG and has directed that all of the components and parts be fabricated locally by the training aids centers and that copies of the user manual be stocked and issued as required.

SUGGESTIONS FOR ADDITIONAL USAGE

Although the ACT was designed as a training method for the intact cavalry platoon undergoing tactical training at the unit level, it will satisfy other training requirements as well.

Limitations of training areas, support equipment, and support personnel plus the costliness of field training make it difficult to train the junior officers and NCOs. The ACT, therefore, can be used in the schools, training centers, and in the units for this purpose. The method can also be used to augment the training of rifle and support squads and of tank and scout sections.

By modifying some of the exercises slightly ACT can also be effectively used at the unit level to integrate and cross-train the squads and sections within a given platoon.

By employing map displays which are smaller in scale and by substituting aircraft, company, battalion, regiment, or division symbols for the vehicle symbols, the ACT can also be used for war gaming and tactical maneuvers conducted by larger units. Although no CPX's or higher unit level exercises have been prepared for this specific purpose, it is believed that many exercises currently in use are readily adaptable to the ACT concept.

Should local commanders wish to duplicate local terrain and carry out their own field exercises or problems, or to prepare additional exercises for use on the trainer, then maps, overlays, and transparencies should be prepared and distributed. If there are already scenarios for the field problems these are easily adapted to the ACT requirements using the five tactical exercises in the User Manual as a guide.

A Note of Caution.

Although training on the ACT will improve the field performance of cavalry platoon personnel, *by no means* should the system be regarded as a substitute for all classroom instruction, or for all field training and realistic combat exercises. Previous classroom instruction and additional field work are

both needed to guarantee maximum operational efficiency. The ACT does provide essential transitional training, which not only serves to bridge the gap between the classroom and the field but also makes field training more meaningful and more effective.

It should be emphasized that the Armored Cavalry Trainer was *not* designed to teach individual vehicle and weapon skills to various platoon members. These and other such skills are still best taught in the Advanced Individual Training (AIT) or Basic Unit (BUT) phases of the training program. The ACT is, primarily, a tactical training method specifically designed for the platoon leader, the platoon sergeant, and the squad and section leaders working together as a coordinated team. It is in this light that its utility and training effectiveness should be judged.

Armor command personnel interested in using training method can obtain additional information and support from their local Training Aids Center or from the Chief, U. S. Army Armor Human Research Unit, Fort Knox, Kentucky 40121.

FOOTNOTES

¹The research reported in this paper was performed by HumRRO Division No. 2 (Armor), Fort Knox, Kentucky, under Department of the Army contract with The George Washington University. The contents of this paper do not necessarily represent the official opinion of the Department of the Army.

²This manual has since been published as USCONARC Pamphlet No. 350-4, *Education and Training User Manual for DVC 17-15 Armored Cavalry Trainer (ACT)* July 1965, HQUSCONARC Fort Monroe, Virginia.

AUTHOR'S NOTE

The Armored Cavalry Trainer (ACT) was designed to supplement existing facilities and to provide an alternate method of training armored cavalry platoons in tactical operations.

The ACT is an indoor tactical war game consisting of these components:

1. A large viewing screen on which enlarged map sections are projected.
2. Separate booths for the personnel who man each individual vehicle in the platoon.
3. Remotely controlled projector units which throw on the projected map sections small silhouettes which represent the platoon vehicles.
4. Standard radio equipment used in the armored cavalry platoon net.
5. Remotely controlled projector units which throw on the screen silhouettes which represent friendly support artillery, aggressor vehicles, personnel, etc.

Accompanying the ACT is a set of standardized training exercises which provide instruction in the principal phases of armored cavalry tactical operations. The device, suitable for classroom use, and the accompanying training exercises, are a means of providing needed additional training in map reading, terrain appreciation and analysis, command and control, team coordination, and combat tactics.

This training method was prepared to provide potential users general guidance for the construction, operation, and maintenance of the ACT, and an overview of the requirements and procedures for its effective utilization.

Additional information may be obtained from the Military Chief, USA Armor Human Research Unit, Fort Knox, Kentucky.

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13. ABSTRACT These articles are based on research in training methods and techniques for improving combat readiness of the armored cavalry platoon. Criteria to evaluate the combat-ready status of the units as a basis for action leading to specific improvements are established through a readiness check, described and illustrated in the first paper. A tactical training method bridging the gap between the classroom and the field is the subject of the second paper.		

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